MEITRACK® GPS Vehicle Tracker

User Guide

VT300

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1. Product Overview

VT300 is a GPS/GSM/GPRS tracking device specially developed and designed for vehicle real-time tracking and fleet management.

With superior GPS and GPRS modules, VT300 has good sensitivity and stable performance. It can get accurate GPS fix even in remote places.

VT300 has the following functions and features:

- SMS and GPRS TCP/UDP Communication (Meiligao Protocol)
- AGPS (with GSM Base Station ID)
- Track on Demand
- Show Location Directly on Mobile Phone
- Track by Time Interval
- Track by Distance
- SOS Panic Button
- Movement Alarm
- Geo-fencing Control
- Low Battery Alarm
- Speeding Alarm
- GPS Blind Area Alarm (in/out)
- Power-cut Alarm
- Engine Cut (Stop Engine)

2. For Your Safety

Read these simple guidelines. Not following them may be dangerous or illegal.

Proper Connection	Do not connect any parts of this product to other incompatible devices. When connecting with other devices, read instructions carefully to ensure proper installation.
Qualified Accessories	Use original parts, qualified batteries and peripheral equipments to avoid damage to VT300.
Safe Driving	Drivers should not operate this product while driving.
Qualified Service	Only qualified personnel can install or repair VT300.
Water Resistance	VT300 is not water resistant. Keep it dry. Install it inside the vehicle.
Confidential Phone Number	For safety reason, do not tell other people the mobile phone number of your VT300 without taking precautions of security settings.

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3. VT300 Characteristics

Items	Specification
Power Supply	+9V - +36V / 1.5A
Backup Battery	850mAh
Normal power consumption	85mA/h
Dimension	115mm x 60mm x 21mm
Installation Dimension	115mm x 79mm x 21mm
Weight	140g
Work time	24 hours in power-saving mode and 10 hours in normal mode
Operating temperature	-20° to 55° C
Humidity	5% to 95% Non-condensing
Frequency	GSM 900/1800/1900Mhz or GSM 850/900/1800/1900Mhz (optional)
GPS Chipset	latest GPS SIRF-Star III chipset
GPS Sensitivity	-159Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Position Accuracy	10 meters, 2D RMS
Velocity Accuracy	0.1 m/s
Time Accuracy	1 us synchronized to GPS time
Default datum	WGS-84
Reacquisition	0.1 sec., average
Hot start	1 sec., average
Warm start	38 sec., average
Cold start	42 sec., average
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/second (1000 knots) max.
LED	1 LED light to show working status.
Button	One SOS button
Interface	One input and one output

4. Getting Started

This section will describe how to set up your VT300.

4.1 Hardware and Accessories

VT300 is supplied in a box which includes:

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VT300 with Battery

GPS Antenna

GSM Antenna

Screws

Wires with SOS Button

CD

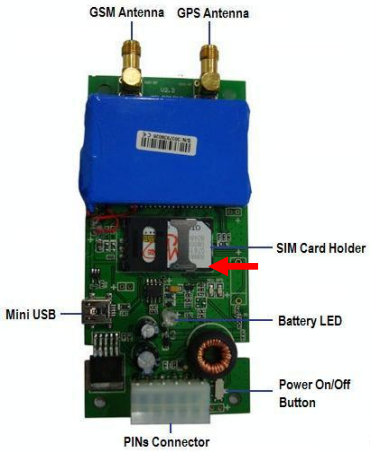
4.2 View

Front View

Side View

Back View

4.3 Functional Parts



Battery LED	
Off	Power is off or charging is complete
Flashing (every 0.1 second)	Low power
On	Charging
Flashing (1 second on and 2 seconds off)	Working
Power On/Off Button	To turn on/off VT300. Note: The switch is on off side as factory default. When the wires are plugged in, VT300 will be switched on automatically as the two yellow cables (SW1 and SW2) are connected together.
SOS Button	SOS button is connected with the wires. Press it to send SOS alarm to the preauthorized

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		phone number.
Mini USB		Used for firmware update and configuration on PC. (USB-to-Serial Adaptor is required for firmware update and configuration by computer)
SIM Card		To insert SIM card here
GSM Antenna		Connector for GSM antenna
GPS Antenna		Connector for GPS antenna
Screw Holes		There are 4 screw holes on the tracker, 2 along either side that act as fixing points to the vehicle
PINs Connector		
PIN	**Color**	**Function**
DC IN	Red	DC In (power input). Input voltage: 9V~36V. 12V suggested.
GND	Black	GND
IN	White	Input. Negative triggering. Low voltage (0V) when effective and open drain or HIGH voltage (>1V and max. 45V) when ineffective.
OUT1	Blue	Output. Low voltage (0V) when effective and open drain when ineffective. Output open drain sink voltage (ineffective): 45V max. Output LOW voltage sink current (effective): 500mA max.
SW1	Yellow	SW1 connected with power switch Note: if you need to connect it to other switch, make sure the voltage should not over 4.5V.
SW2	Yellow	SW2 connected with power switch Note: if you need to connect it to other switch, make sure the voltage should not over 4.5V.

4.4 Connecting and Installation

Read this manual before using your VT300. Check to make sure all parts are included in the packaging box.

4.4.1 Ensure that your VT300 has a working SIM card installed.

- Check that the SIM card has not run out of credit (test the SIM card in a phone to make sure it can send and receive SMS).
- Check that the SIM card Lock code is turned off.
- If you require the function of sending an SMS location report to the authorized phone number when it makes a call to the VT300, please make sure the SIM installed supports displaying caller ID.

Before inserting SIM card, cut off the power for VT300.

Install SIM Card

- Unscrew and remove the front cover of VT300.
- Insert the SIM card by sliding it into the card slot with the chip module facing the connectors on PCB.
- Replace the front cover and screw it up.

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4.4.2 Antenna Connection

Connect the GSM Antenna to VT300.

Connect the GPS Antenna to VT300.

- GPS antenna is used to receive satellite signals in the sky. It should be fixed to face the sky and should not be covered or shielded by any objects containing metal, such as the metallic windshield. (It is recommended to place this device under the windshield.)

4.4.3 Find a suitable place inside the car for installing VT300. Wiring connections must be firm and reliable. The joints should be wrapped tightly with insulating tape. The unused electrical wire should be properly insulated.

Check to make sure all wirings have been connected correctly. Then connect the AVL unit to the motor power.

Check that the Red LED (Battery) is flashing 1 second on and 2 seconds off.

Make a missed phone call the VT300 using a mobile phone to check if the call can go through. The VT300 should reply with an SMS indicating longitude, latitude, speed and date.

5. Change Password

Command: W******,001,######

Description: Change user's password.

Note:

1. ****** is user's password and the default password is 000000. The tracker will only accept commands from a user with the correct password. Commands with wrong password will be ignored.

2. ###### is the new password. Password should be 6 digits.

Example:

W000000,001,123456

W123456,001,999999

6. Time Zone

Command: W******,032,T

Description: Correct time to your local time

Note:

1. Default time of the tracker is GMT

2. This correction is applied to location reports by SMS and SMS alarms.

T=0, to turn off this function;

T=[-32768,32767] to set time difference in minute to GMT.

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For those ahead of GMT, input the time difference in minutes directly.

For example, GMT+8, W000000,032,480 (8 hours is 480 minutes).

'-'is required for those behind GMT. For example, W000000,032,-120 (2 hours or 120 minutes behind GMT).

Example:

W000000,032,480

W000000,032,-120

7. Track

7.1 Track by SMS

- Track on Demand - Reply with longitude, latitude, speed and date

Command: W******,000

Description: To get the current location of the tracker, send this command as an SMS or make a telephone call directly to the tracker. After doing so, the device will report its longitude and latitude by SMS with the format as follows:

Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

Example:

W000000,000

- Track on Demand - Reply with a link to Google Maps

Command: W******,100

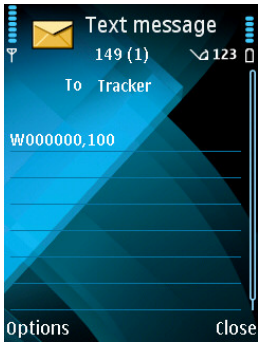
Description: Send this command to the tracker and you will receive an SMS with an http link. Click on the link and the location will be shown directly on your mobile phone using Google maps. For example:

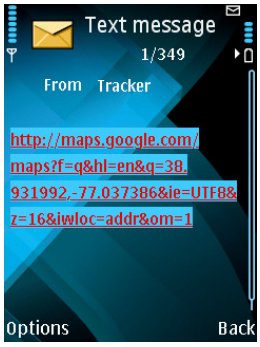
http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1

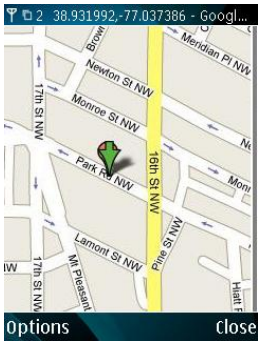
Note: Only smart phones and PDAs support this function.

Example:

W000000,100







7.2 Track by Calling

Make a missed call to the tracker and it will report its longitude and latitude by SMS with the following format:

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Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

7.3 Track by Preset Interval

Command: W******,002,XXX

Description: Set an interval for the tracker to continuously report its location by SMS

Note:

1. XXX is the interval in minutes;

2. XXX=000 to turn off tracking by time.

Example:

W000000,002,030

The tracker will send location data back to your mobile phone every 30 minutes.

7.4 Google Earth and Google Maps

Download Google Earth from http://earth.google.com/.

Start Google Earth (For more information about Google Earth please refer to http://earth.google.com/ or go to http://maps.google.com).

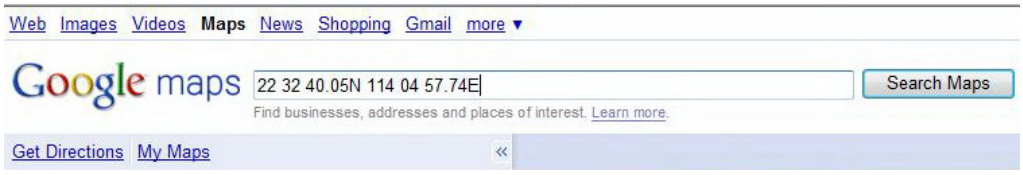
Input the latitude and longitude that you received from the tracker by SMS and click the search button. Google Earth or Google Maps will display the location for you.

Example:

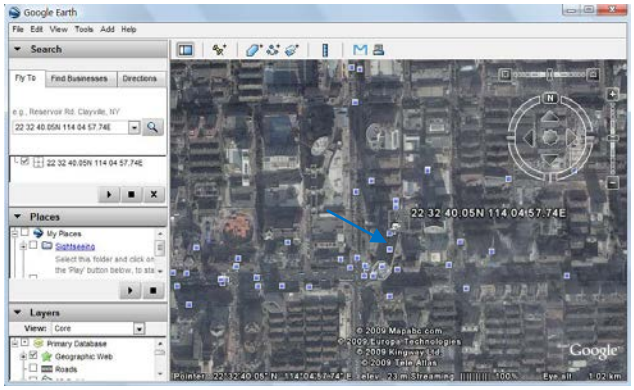
When you receive: Latitude = 22 32 40.05N Longitude = 114 04 57.74E

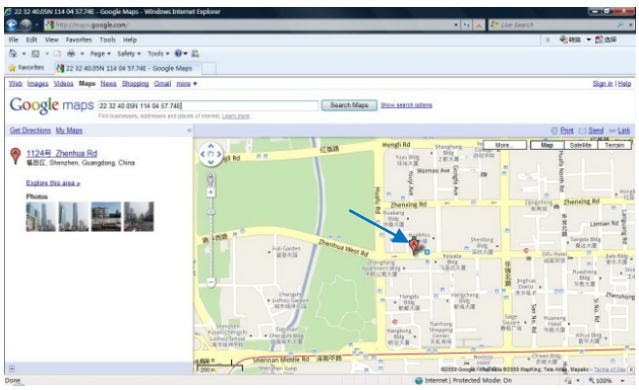
Type as the following picture shows:

(Note: you should input the latitude and longitude as: 22 32 40.05N 114 04 57.74E)



And then you can find the location of your tracker:





You can also use local map software on PDAs or car navigation device to input the coordinates.

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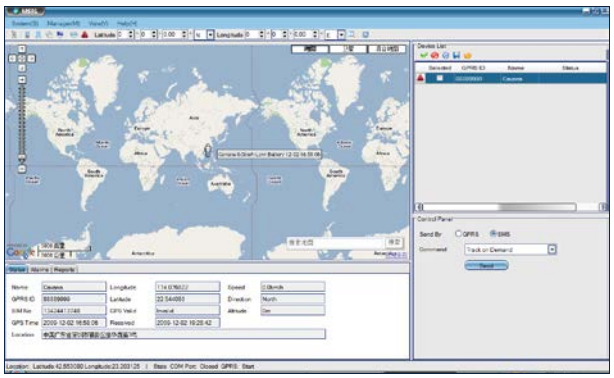
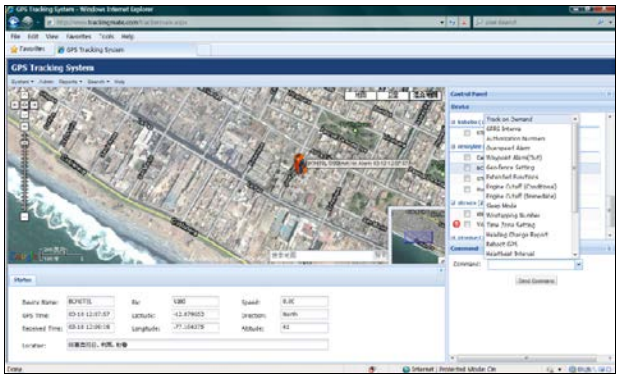
7.5 Track by MS01/MS02

You can also see a physical location on a map with our GPS Tracking Software MS01 or MS02.

This software is available for purchase and can be used for tracking after proper configuration





Please refer to MS01/MS02 User Guide for more information.

7.6 Track by GPRS (Meiligao Protocol) between Server and Tracker

7.6.1 Set Tracker's GPRS ID

Command: W******,010,ID

Description: Sets a digital GPRS ID for the tracker.

Note:

GPRS ID must not be over 14 digits.

Example:

W000000,010,00001

7.6.2 Set APN

Command: W******,011,APN,Username,Password

Description: Set APN details for the tracker

Note:

1. APN username and password are optional. If no APN username and password are required, just input APN only;
2. APN defaulted as 'CMNET';
3. APN + username + password should not over 39 characters.

Example:

W000000,011,CMNET,Meiligao,6688

W000000,011,CMNET

7.6.3 Set IP and Port

Command: W******,012,IP,Port

Description: Set the IP and Port of tracker for GPRS communication.

Note:

1. IP is your server's IP or the domain name.
2. Port: [1,65534].

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Example:

W000000,012, 220.121.7.89,8500

W000000,012,www.meiligao.net,8500

7.6.4 Set DNS Server IP (optional)

Command: W******,009,DNS Server IP

Description: If the domain name you set by the last command (W******,012,IP, Port) doesn't work, your servers IP is not properly set. You can first use this command to set DNS Server IP (please check with your DNS server provider for the DNS Server IP) and then redo the command W******,012,IP, Port.

Example: W000000,009,220.23.4.90

7.6.5 Enable GPRS Tracking

Command: W******,013,X

Description: Enable GPRS tracking function.

Note:

X=0, to turn off GPRS tracking (default);

X=1, to enable GPRS tracking via TCP;

X=2, to enable GPRS tracking via UDP.

Example: W000000,013,1

7.6.6 Set GPRS Interval

Command: W******,014,XXXXX

Description: Set time interval for sending GPRS packets.

Note:

XXXXX should be in five digits and in unit of 10 seconds.

XXXXX=00000, to turn off this function;

XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds.

Example: W000000,014,00060

In this example, the tracker will send every 600 seconds (10 minutes).

For more information regarding GPRS tracking please refer to GPRS Communication Protocol.

7.7 Track by GpsGate

The VT300 supports GpsGate Software.

Please contact our company or GpsGate for more information for settings.

8. Authorization

Command: W******,003,F,1,T

Description: Authorize phone numbers for the SOS/inputs, receiving location reports, SMS alarms or phone calls

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Note:

F=0, to turn off this function; (default)

F=1, Sends SMS to the authorized phone number.

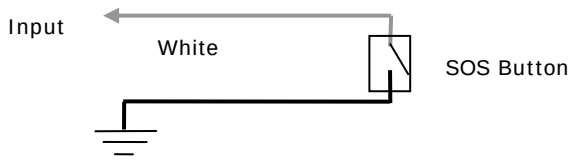
T: Preset phone number. Max.16 digits.

Example:

W000000,003,1,1,88888888

SOS Button Connection:

Connect the SOS button and wires as below picture shows:



Note: input voltage to Input must not over 45V.

After above authorization is completed, and the SOS is pressed, an SOS SMS - "SOS Alarm" will be sent to the preauthorized phone number. Then a message with longitude and latitude will follow.

(Note: An SOS button is already connected to VT300 in standard packing)

9. Speeding Alarm

Command: W******,005,XX

Description: Turn on speeding alarm. When the tracker speeds higher than the preset value, it will send an SMS to the phone number for SOS.

Note: XX is the preset value of speed and in 2 digits.

=00 , to turn off this function;

=[01, 20] (unit: 10Km/h).

Example: W000000,005,08

When the tracker's speed is over 80km/h, an SMS alarm will be sent out.

10. Movement/Geo-fence

10.1 Movement Alarm

Command: W******,006,X

Description: When the tracker moves out of a preset circle scope, it will send an SMS alarm to the authorized phone number for SOS.

Note:

1. X is the preset radii to the tracker's original place.

=0, to turn off this function.

=1, 30m	=2, 50m	=3, 100m	=4, 200m

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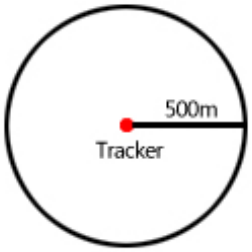
=5, 300m	=6, 500m	=7, 1000m	=8, 2000m

2. Radii: [1, 4294967295] meter(s), suggest to be set above 100 meters.

3. GPRS command is 0x12.

Example: W000000,006,1



When tracker moves out of this circle scope, it will send out an SMS alarm.

10.2 Geo-fence Alarm

Command: W******,302,X

Description: Turns on Geo-fencing alarm. When the tracker moves in/out the preset scope, it will send an SMS alarm to the authorized phone number for SOS.

1. X is the parameters which includes: latitude, longitude, radii, in, out.

2. Latitude and longitude should be in ASCII format as follows:

Latitude is ddd.dddddd, '0' is needed to be stuffed if no value available. '-' should be added for south.

Longitude is dd.dddddd, '0' is needed to be stuffed if no value available. '-' should be added for west.

3. Radii: [1, 4294967295] meter(s), suggested to be set above 100 meters, if set above 8, it is corresponding radii.

4. If In and Out are 0, corresponding function is invalid. If In and Out are 1, valid.

5. Reply as Geo-Fence Alarm.

6. GPRS exiting command is 0x12, entering command is 0x13.

7. Send W******, 302 to turn off Geo-fence function.

Example:

W000000,302,22.000000,-114.123456,3000,1,1

Remarks:

1. Only one alarm can be set in either In or Out;

2. Only one alarm can be set in either Movement Alarm or Geo-fence Alarm.

11. Track by Distance

Command: W******,303,X

Description: Send this command to set distance interval

Note:

1. X= [1, 4294967295], suggested to be set above 300 meters;
2. X=0, turn off.

Example: W000000,303,1000

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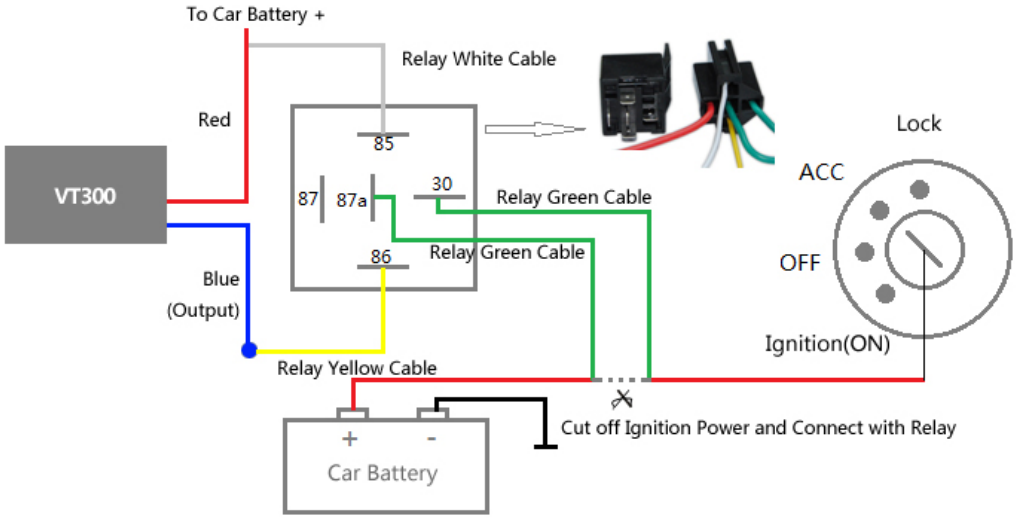
12. Engine Cut

Relay Connection: Connect a relay as the below picture shows:



Calculate the correct VCC value according to relay's parameter to comply with the following requirements:

Output open drain sink voltage (ineffective)	45V max.
Output low voltage sink current (effective)	500mA max.

Normally two green wires are connected solidly (P1 and P2 are Normal Close [NC] in the relay), when the Output (Out1) is open (Out1 be Low voltage), two green wires will disconnect, and the engine is then cut.

12.1 Output Control (Immediate)

Command: W******,020,1,F

Description: Send this command to control the Output of VT300

Note:

F=0, to close the output (open drain);

F=1, to open the output (low voltage).

Example: W000000,020,1,1

Once the relay is properly installed, send this command to stop the engine.

12.2 Output Control (Conditional)

Command: W******,120,F or W******,220,F

Description: Send this command to control the Output of VT300. This command is only workable when the speed is below 10km/h(command 120) or 20km/h(command 220) and GPS is available.

Note:

F=0, to close the output (open drain);

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F=1, to open the output (low voltage).

Example:

W000000,120,1

W000000,220,1

Once the relay is properly installed, send this command to VT300. When its speed reaches at 10km/h or 20km/h, it will stop the engine.

13. Heading Change Report

Command: W******,036,degree

Description When the heading direction of the tracker changes over the preset degree, a message with location data will be sent back to the server by GPRS. This enhances the accuracy when the tracker makes a direction change.

Note:

degree=0, to turn off this function;

degree=[1,360], to set degree of direction change.

Example: W000000,036,90

When the tracker turns more than 90 degree, a message will be sent back to the server.

14. Heartbeat

Command: W******,015,data

Description: Set an interval for heartbeat.

Note:

data is the interval in unit of minutes.

data=0, to turn off this function;

data=1~65535, set interval for heartbeat.

Example:

W000000,015,10

In this example, the tracker will send heartbeat every 10 minutes.

15. Get IMEI

Command: W******,601

Description: Get IMEI of the tracker. IMEI is 15 digits

Example: W000000,601

16. Initialization

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Command: W******,990,099###

Description: This sets all settings, except for the password, back to factory default.

Note: Send SMS "Default?" to the device. Within 120 seconds, send this SMS command to the tracker.

is the ending character and is required in the text message.

Example: W000000,990,099###

17. Password Initialization

Command: W888888,999,666

Description: This resets the password back to factory default and can be used in case you forget your password.

Note: Send SMS "Default?" to the device, and then, within 120 seconds, send this SMS command to the tracker to set the password back to factory default (000000).

If you have set an authorized telephone number, when the password has been successfully preset, the telephone will receive W888888,999,666

Example: W888888,999,666

For more details regarding SMS commands, please go to Annex 1 Command List.

18. Parameter Editor

The tracker can also be configured by computer using the Parameter Editor. This method is much easier and user friendly.

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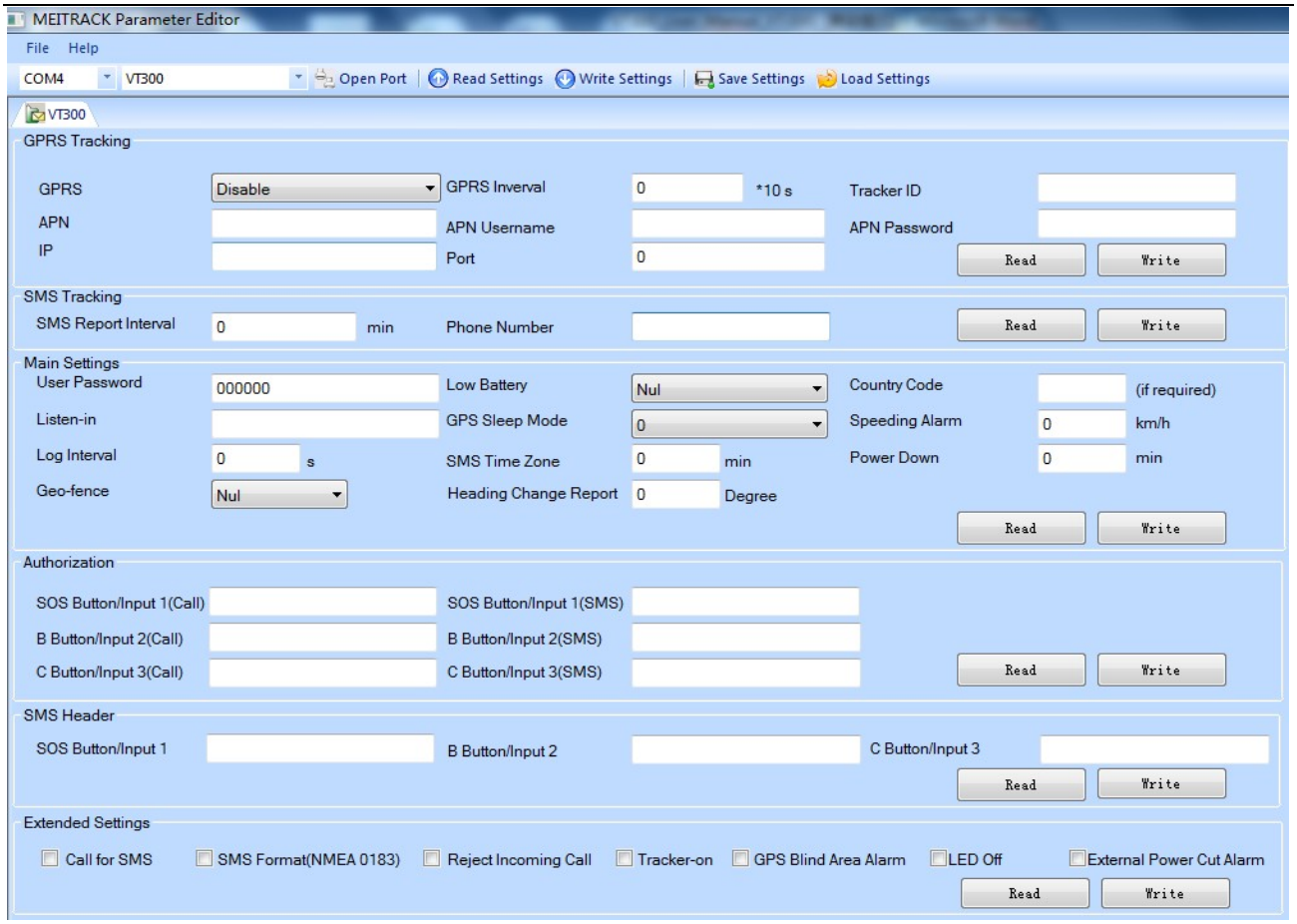
MEITRACK Parameter Editor
File Help
COM4 VT300 Open Port Read Settings Write Settings Save Settings Load Settings
VT300
GPRS Tracking
GPRS Disable GPRS Inverval 0 *10 s Tracker ID
APN APN Username APN Password
IP Port 0
Read Write
SMS Tracking
SMS Report Interval 0 min Phone Number
Read Write
Main Settings
User Password 000000 Low Battery Nul Country Code (if required)
Listen-in GPS Sleep Mode 0 Speeding Alarm 0 km/h
Log Interval 0 s SMS Time Zone 0 min Power Down 0 min
Geo-fence Nul Heading Change Report 0 Degree
Read Write
Authorization
SOS Button/Input 1(Call) SOS Button/Input 1(SMS)
B Button/Input 2(Call) B Button/Input 2(SMS)
C Button/Input 3(Call) C Button/Input 3(SMS)
Read Write
SMS Header
SOS Button/Input 1 B Button/Input 2 C Button/Input 3
Read Write
Extended Settings
Call for SMS SMS Format(NMEA 0183) Reject Incoming Call Tracker-on GPS Blind Area Alarm LED Off External Power Cut Alarm
Read Write

Please refer to Meitrack Parameter Editor for more information.

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Annex 1. SMS Command List

Note: ****** is user's password and the default password is 000000. The tracker will only accept commands from a user with the correct password. Commands with wrong password will be ignored.

Description	SMS Command	Example
Track on Demand	W******,000	W000000,000
Remarks: To get the current location of the tracker, send this command as an SMS or make a telephone call directly to the tracker. After doing so, the device will report its longitude and latitude by SMS with format as follows: Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50		
Track on Demand **-Google Link**	W******,100	W000000,100
Remarks: Send this command to the tracker and you will receive an SMS with a http link. Click on the link then the location will be shown directly on your mobile phone using Google Maps. For example: http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1 (Note: Only smart phones and PDAs support this function.)		
Change Password	W******,001,######	W000000,001,123456
Remarks: To change user's password. ###### is the new password. Password should be 6 digits.		
Track by Interval	W******,002,XXX	W000000,002,030
Remarks: To set interval for automatic timed report. XXX is the interval in minutes. If XXX=000, turn off tracking by time. In this example, the tracker will send location data back to your mobile phone every 30 minutes.		
Authorization	W******,003,F,1,T	W000000,003,1,1,88888888
Remarks: Authorize phone numbers for the SOS button (input) for receiving location reports and SMS alarms. F=0, to turn off this function (default); F=1, to turn on the function of sending SMS reports/alarms to the authorized phone number. T: Preset phone number. Max.16 digits.		
Speeding Alarm	W******,005,XX	W000000,005,08
Remarks: When the tracker speeds higher than the pre-set value, it will send an SMS to the authorized phone number for SOS. XX is the preset value of speed and in 2 digits. =00 , to turn off this function; =[01, 20] (unit: 10Km/h). In this example, when the tracker's speed is over 80km/h, an SMS alarm will be sent out.		
Movement Alarm	W******,006,X	W000000,006,6
Remarks: When the tracker moves out of a preset circle scope, it will send an SMS alarm to the authorized phone number for SOS. X is the preset radii to the tracker's original place =0, to turn off this function		

=1, 30m	=2, 50m	=3, 100m	=4, 200m
=5, 300m	=6, 500m	=7, 1000m	=8, 2000m

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Geo-fence Alarm	W******,302,X	W000000,302,22.000000,-114.123456,3000,1,1

Remarks: Turn on Geo-fencing alarm. When the tracker moves in/out the preset scope, it will send an SMS alarm to the authorized phone number for SOS.

Note:

1. X is the parameters which includes: latitude, longitude, radii, in, out.

2. Latitude and longitude should be in ASCII format as follows:

Latitude is ddd.dddddd, '0' is needed to be stuffed if no value available. '-' should be added for south.

Longitude is dd.dddddd, '0' is needed to be stuffed if no value available. '-' should be added for west.

3. Radii: [1, 4294967295] meter(s), suggest to be set above 100 meters, if set above 8, it is corresponding radii.

4. If In and Out are 0, corresponding function is invalid, if are 1, valid.

5. Reply as Geo-Fence Alarm.

6. GPRS exiting command is 0x12, entering command is 0x13.

7. Send W******, 302 to turn off Geo-fence function.

Track by Distance	W******,303,X	W000000,303,1000

Remarks: Send this command to set distance interval

Note:

1. X= [1, 4294967295], suggest to be set above 300 meters;
2. X=0, turn off.

Extended Functions	W******,008,ABCDEFGHIJ###	W000000,008,1011100011###

Remarks:

A=0, turn off the function of sending SMS location report after a phone call is made to the tracker;

A=1, turn on the function of sending SMS location report after a phone call is made to the tracker.

B=0, location data of NMEA 0183 GPRMC will be interpreted into normal text for easy reading;

For example, Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

B=1, location data complies with NMEA 0183 GPRMC protocol.

For example, $GPRMC,161509.000,A,2232.5485,N,11404.6887,E,0.3,153.7,290709,,*03.

C=0, turn off the function to automatically hang up an incoming call;

C=1, turn on the function to automatically hang up an incoming call after 4 - 5 rings.

D=0, turn off the function of sending an SMS when the tracker is turned on;

D=1, turn on the function of sending an SMS to the authorized phone number for SOS when the tracker is turned on.

E, defaulted as 1 (the tracker shuts down automatically when the power voltage is lower than 3V).

F=0, turn off the SMS alarm when the tracker enters GPS blind area.;

F=1, turn on the SMS alarm when the tracker enters GPS blind area. SMS is to be sent to the authorized phone number for SOS.

G=0, all LEDs work normally;

G=1, all LEDs stop flashing when the tracker is working.

H, reserved and defaulted as '0'

I=0, turn off the function of sending SMS alarm when the extra power of the vehicle tracker is cut;

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I=1, turn on the function of sending an SMS alarm to the authorized phone number for SOS when the extra power of the vehicle tracker is cut.

J, defaulted as 1.

is the ending character.

(ABCDEFGHIJ defaulted as 1000100001)

Presetting by SMS for GPRS tracking (*Ensure that your SIM card supports GPRS connection prior to setting)*

Set Tracker's GPRS ID	W******,010,ID	W000000,010,00001
Remarks: to set a digital GPRS ID for the tracker. GPRS ID must not over 14 digits.		
Set APN	W******,011,APN,Username,Password	W000000,011,CMNET,Meiligao,6688 W000000,011,CMNET
Remarks: If no APN username and password are required, just input APN only. APN defaulted as 'CMNET'. APN + username + password should not over 39 characters.		
Set IP and Port	W******,012,IP,Port	W000000,012, 220.121.7.89,8500 W000000,012,www.meiligao.net,8500
Remarks: IP is your server's IP or the domain name. Port: [1,65534].		
Set DNS Server IP	W******,009,DNS Server IP	W000000,009,220.23.4.90
Remarks: If the domain name you set by the last command (W******,012,IP, Port) doesn't work, your server IP is not properly set. You can first use this command to set DNS Server IP (please check with your DNS server provider for the DNS Server IP) and then redo the command W******,012,IP,Port.		
Enable GPRS Tracking	W******,013,X	W000000,013,1
Remarks: X=0, to turn off GPRS tracking (default); X=1, to enable GPRS tracking via TCP; X=2, to enable GPRS tracking via UDP.		
Set GPRS Interval	W******,014,XXXXX	W000000,014,00060
Remarks: to set time interval for sending GPRS packets. XXXXX should be in five digits and in unit of 10 seconds. XXXXX=00000, to turn off this function; XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds. In this example, the tracker will send every 600 seconds (10 minutes).		
Set Heartbeat Interval	W******,015,data	W000000,015,10
Remarks: to set interval for heartbeat. Data: in unit of minutes		

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data=0, to turn off this function;

data=1~65535, set interval for heartbeat.

In this example, the tracker will send heartbeat every 10 minutes.

Set Sensitivity of Tremble Sensor	W******,035,XX	W000000,035,30

Remarks: Send this command to set sensitivity of tremble sensor.

Note:

1. XX=[1,255], it will be more sensitive if XX is smaller
2. Default value is 30.

Example: W000000,035,30

Heading Change Report	W******,036,degree	W000000,036,90

Remarks: when the heading direction of the tracker changes over the preset degree, a message with location data will be sent back to the server by GPRS.

degree=0, to turn off this function.

degree=[1,360], to set degree of direction change.

For more information regarding GPRS tracking please refer to <GPRS Communication Protocol>

Output Control (Immediate)	W******,020,1,F	W000000,020,1,1

Remarks:

F =0, to close the output (open drain)	=1, to open the output (low voltage)

For example, if you have connected Output1 with a relay, you can send W000000,020,1,1 to stop the engine.

Output Control (Conditional)	W******,120,F W******,220,F	W000000,120,1 W000000,220,1

Remarks: This function is achievable only when the speed is below 10km/h (command 120) or 20km/h (command 220) and meantime GPS is available.

F=0, to close the output (open drain)	=1, to open the output (low voltage)

Sleep Mode	W******,021,X	W000000,021,2

Remarks: this setting is for power saving.

X=0 turn off sleep mode	X=1 Level I	X=2 Level II	X=3 Level III

Here is some explanation for the sleep mode.

GPS module will be closed for 64 seconds * X (X=1, 2, 3), if it gets continuous GPS fixed for 32 times or Non-GPS fixed for 128 times. After that, GPS module will periodically work and close.

Power Down	W******,026,XX	W000000,026,10

Remarks: Put the tracker in power down mode when the tracker is inactive (stationary) for a period of time.

In Power Down mode, GPS stops working and GSM enters sleep mode and stop sending out messages. The device remains in this mode until it is activated by message, incoming calls, or input changes.

XX=00, to turn off this function;

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XX=01~99, to turn on Power Down after a specified period of being inactive. It is in unit of minutes. In this example, the tracker will enter power down mode after it is inactive for 10 minutes.		
Time Zone	W******,032,T	W000000,032,480 W000000,032,-120
Remarks: Default time of the tracker is GMT, you can use this command to correct it to your local time. This command is for SMS tracking only. T=0, to turn off this function; T=[-32768,32767] to set time difference in minute to GMT. For those ahead of GMT, just input the time difference in minutes directly. For example, GMT+8, W000000,032,480 (8 hours is 480 minutes). '-'is required for those behind GMT. For example, W000000,032,-120.		
Set SMS Header	W******,033,P,Char	W000000,033,1,help
Remarks: this command is to set initial characters for SOS message when SOS/IN1, Button B/IN2, Button C/IN3 is pressed.		
P=1, SOS button/Input1	P=2, B button/Input2	P=3, C button/Input3
Char is the character in SOS message and max 32 characters and defaulted as:		
1 SOS Alarm!	2 Cry For Help!	3 Call The Police!
Get Version No. and Serial No.	W******,600	W000000,600
Remarks: to get the version and serial number of tracker's firmware		
Get IMEI	W******,601	W000000,601
Remarks: to get IMEI of the tracker		
Reboot GSM	W******,901###	W000000,901###
Remarks: to reboot the GSM module of the tracker		
Reboot GPS	W******,902###	W000000,902###
Remarks: to reboot the GPS module of the tracker		
Initialization	W******,990,099###	W000000,990,099###
Remarks: Send SMS "Default?" to the device, within 120 seconds, send this SMS command to the tracker to make all settings (except for the password) back to factory default. ### is the ending character.		
Password Initialization	W888888,999,666	W888888,999,666
Remarks: In case you forget your password, Send SMS "Default?" to the device, within 120 seconds, send this SMS command to the tracker to make the password back to factory default (000000).		

Annex 2. Troubleshooting

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Problem: Unit will not turn on when pushing the power switch to On side	
Possible Cause:	**Resolution:**
Power switch was not pushed properly	Make sure the power button is pushed to On side
Battery needs charging	Recharge battery for 3 hours
Problem: Unit will not reply with SMS	
Possible Cause:	**Resolution:**
Green LED is flashing (1 second on and 2 seconds off)	Make sure device is connected to GSM network
GSM Network is slow	Some GSM networks slow down during peak time or when they have equipment problems
Unit is sleeping or in power down mode	Cancel sleeping mode or power down
Wrong password in your SMS or wrong SMS format	Write correct password or SMS format
The SIM has run out of credit	Replace or top up the SIM card
Problem: Green LED is Flashing (1 second on and 2 seconds off)	
Possible Cause:	**Resolution:**
No GSM signal	Check with a mobile phone to see if there is a signal in the area or try to call the unit to see if you hear a ring tone
No SIM card	Insert a working SIM card. Check in phone that the SIM can send SMS message.
SIM card has expired	Check in phone that the SIM can send SMS message. Replace SIM card if needed
SIM has PIN code set	Remove PIN code by inserting SIM in your phone and deleting the code
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled
Battery is low	Recharge the unit and the GSM will start working
Problem: Blue LED is Flashing (1 second on and 2 seconds off) or the SMS received starts with 'Last…'	
Possible Cause:	**Resolution:**
Unit does not have clear view of the sky	Move the unit to a location where the sky is visible. Tall buildings, trees, and heavy rain can cause problems with the GPS reception.
Bad GPS reception	Place the front side of device towards sky
Battery is low	Recharge the unit and the GPS will start working
Problem: Unit Fails to Connect to Server via GPRS	
Possible Cause:	**Resolution:**
SIM card does not support GPRS function	Enable SIM card GPRS function
GPRS function is turned off	Turn on GPRS function
Incorrect IP address or PORT	Get the right IP address and PORT and reset
GSM signal is weak	Move the unit to a location with good GSM reception
Problem: Unit will not turn on	
Possible Cause:	**Resolution:**
Wiring was not connected properly	Check and make sure wiring connection is in order.
Battery needs charging	Recharge battery
Problem: Unit will not respond to SMS	
Possible Cause:	**Resolution:**
GSM antenna was not installed properly	Make sure device is connected to GSM network

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GSM Network is slow	Some GSM networks slow down during peak time or when they have equipment problems
Unit is sleeping	Cancel sleeping mode
Wrong password in your SMS or wrong SMS format	Write correct password or SMS format
The SIM has run out of credit	Replace or top up the SIM card
No SIM card	Insert a working SIM card. Check in phone that the SIM can send SMS message
SIM card has expired	Check in phone that the SIM can send SMS message. Replace SIM card if needed.
SIM has PIN code set	Remove PIN code by inserting SIM in your phone and deleting the code
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled
Error connecting GSM antenna	Make sure the GSM antenna is connected to the GSM interface
Problem: SMS received starts with 'Last…'	
Possible Cause:	**Resolution:**
Unit does not have clear view of the sky	Move the antenna of the unit to a location where the sky is visible
VT300 is in an inner place	Wait for the target to come out
Battery is low	Recharge the unit and the GPS will start working
Error connecting GPS antenna	Make sure the GPS antenna is connected to the GPS interface
Problem: Unit Fails to Connect to Server via GPRS	
Possible Cause:	**Resolution:**
SIM card in VT300 does not support GPRS function	Enable SIM card GPRS function
GPRS function of VT300 is turned off	Turn on GPRS function of VT300
Incorrect IP address or PORT	Get the right IP address and PORT and reset to VT300
GSM signal is weak	Move the unit to a location with good GSM reception
Problem: Unit will not turn on	
Possible Cause:	**Resolution:**
Wiring was not connected properly	Check and make sure wiring connection is in order
Battery needs charging	Recharge battery
Problem: Unit will not respond to SMS	
Possible Cause:	**Resolution:**
GSM antenna was not installed properly	Make VT300 connected to GSM network
GSM Network is slow	Some GSM networks slow down during peak time or when they have equipment problems
Unit is sleeping	Cancel sleeping mode
Wrong password in your SMS or wrong SMS format	Write correct password or SMS format
The SIM in VT300 has run out of credit	Replace or top up the SIM card
No SIM card	Insert a working SIM card. Check in phone that the SIM can send SMS message

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SIM card has expired	Check in phone that the SIM can send SMS message. Replace SIM card if needed
SIM has PIN code set	Remove PIN code by inserting SIM in you phone and deleting the code
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled
Error connecting GSM antenna	Make sure the GSM antenna is connected to the GSM interface
Problem: SMS received starts with 'Last…'	
Possible Cause:	**Resolution:**
Unit does not have clear view of the sky	Move the antenna of the unit to a location where the sky is visible
VT300 is in an inner place	Wait for the target to come out
Battery is low	Recharge the unit and the GPS will start working
Error connecting GPS antenna	Make sure the GPS antenna is connected to the GPS interface
Problem: Unit Fails to Connect to Server via GPRS	
Possible Cause:	**Resolution:**
SIM card in VT300 does not support GPRS function	Enable SIM card GPRS function
GPRS function of VT300 is turned off	Turn on GPRS function of VT300
Incorrect IP address or PORT	Get the right IP address and PORT and reset to VT300
GSM signal is weak	Move the unit to a location with good GSM reception

Contacts

Please do not hesitate to email us at info@meitrack.com if you have any questions.

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